Carbon Dioxide Emissions Control for Natural Gas-Fired Power Generation

Projected Benefits

Carbon Capture's research to date indicates that algae-based carbon absorption has significant potential benefits for natural gas-fired power generation:

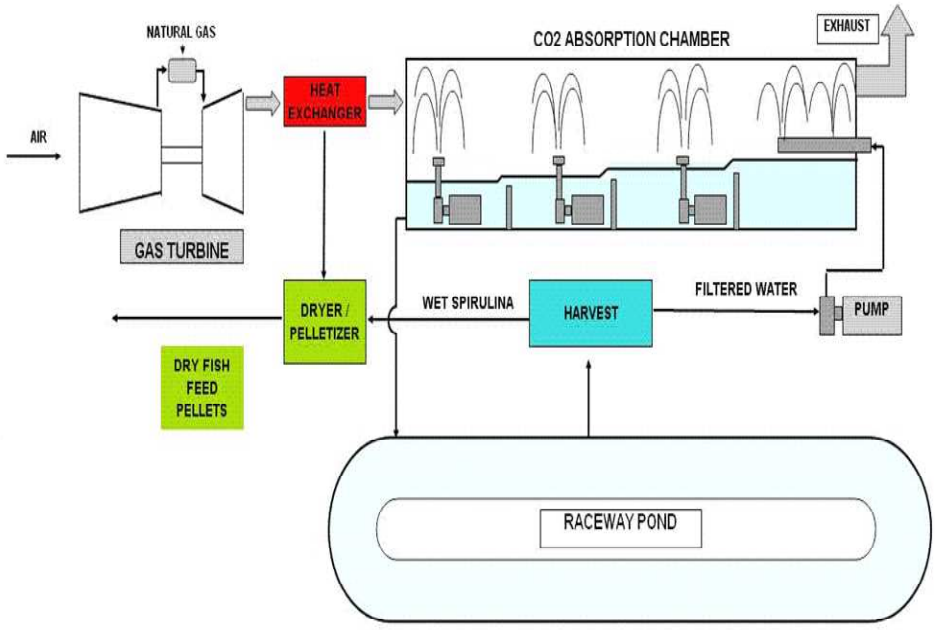
1. Maximum CO_2 abatement
2. Parasitic load below 2%
3. Cost of CO_2 capture below $20/ton
4. Safe operation and short time-frame for implementation
5. Revenue from algae production
6. Feed-grade algae pellets provide commercial fish farms with an alternative to feed products harvested from our oceans.

Achievements

At our 326-acre research and development facility in Southern California, Carbon Capture tested algae-based carbon absorption on two 30-kilowatt (kW) natural gas turbines and diesel generators. Within these functional prototypes, a 90% plus reduction of CO_2 was achieved with limited parasitic load.

As data collection continues, the next scale of power generation with algae-based carbon absorption is under fabrication.

The third scale is a 46-MW peaker power plant. Carbon Capture secured a Conditional Use permit and an Authority to Construct In 2007. Interconnection is underway for this first commercial facility, with projected operation in 2009.



Overview of CO_2 Absorption Process 1

The Need – Commercially Viable CO_2 Control for the Utility Industry

The greenhouse gas, carbon dioxide (CO_2), is now the target of new emission control regulations and credit trading programs worldwide. Reducing CO_2 emissions may place substantial new costs upon the utility industry, one of the largest sources of CO_2 emissions. New emissions controls under development remain unproven on a commercial scale and high implementation costs remain an industry-wide concern.

The Solution – Algae-Based Carbon Absorption

Carbon Capture Corporation's CO_2 emissions control for natural gas-fired power generation combines new and existing technologies to achieve efficient algae-based carbon absorption. This innovative method offers safe, commercially viable emissions control that can be achieved in a short timeframe. Emissions are channeled through absorption columns and into man-made algae ponds where CO_2 is metabolized (reduced). Mature algae is then harvested and pelletized for agriculture and aquaculture markets.

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Applications

Carbon Capture's algae- based carbon absorption process is currently designed to facilitate ultra low emission power generation from natural gas. The focus of future research will be on transferring this proven technology to coal and biofuels applications, as well as other industrial uses.

Imperial Valley, California—Aerial view of Carbon Capture Corporation's 326-acre research facility. Plans are currently underway for a 46-MW peaker power plant to be located on a 160-acre site nearby.

Consultant Team

Stuart Bussell, Ph.D., Process Development Advisor

Leo Sullivan, Legal Affairs

Alina Kulikowski-Tan, Government Relations and Project Management

Dallas Weaver, Ph.D., Aquaculture and Chemistry Advisor

The Company

Carbon Capture Corporation is a privately held company dedicated to the reduction of carbon dioxide (CO_2) emissions from electric power plants. Founded in 2006, the company is located in Southern California where it owns and operates a 326-acre research center and a 160-acre site for a proposed 46-megawatt ultra-low emission power generation facility. Carbon Capture's process development team currently comprises twenty individuals with expertise ranging from aquaculture, biotech and biology to power generation, real estate development and engineering.

The Management Team

Paul Engh, CEO, Carbon Capture Corporation and Managing Partner of the Imperial Group companies
During Mr. Engh's tenure, the Imperial Group has developed approximately 40 federal office projects. Additionally, Mr. Engh has managed a diverse portfolio of agricultural, mineral and energy investments. He holds a B.A. in Economics from UC Davis.

Craig Metz, Founder and EVP and Managing Partner of the Imperial Group companies
Mr. Metz has arranged financing for commercial transactions totaling nearly $2 billion. Mr. Metz holds a B.A. in Economics from UC Davis and an MBA from UC Berkeley.

Bernard Raemy, Energy Development
Mr. Raemy brings extensive international knowledge of renewable and conventional power generation to Carbon Capture. He is currently developing the company's 46-megawatt ULE natural gas power generation facility in Imperial Valley, California. Prior to joining Carbon Capture, he developed a 215-MW geothermal project for CalEnergy that was permitted by the California Energy Commission. He holds an MBA from Duke University and a Bachelor's in Mechanical Engineering from Haute Ecole Arc Ingénierie in his native Switzerland.

Donald Engh, Mechanical Engineering
Mr. Engh researched and co-developed the operation's algae-based carbon absorption process. He brings 20 years of mechanical engineering expertise to Carbon Capture, as well as an extensive background in CNC programming and manufacturing engineering. His work with robotics has been featured in *Wired* and *Servo* magazines. Mr. Engh holds a B.S. in Mechanical Engineering from UC San Diego.

Ed Hale, Government Relations and Agriculture Industry Expert
Mr. Hale brings practical Imperial Valley agricultural experience to his position at Carbon Capture. He is known as an early adopter of innovative farming procedures and for taking an active leadership role in the formulation of Imperial Valley's agricultural and environmental policies.

Jim DeMattia, Aquatic Biology
Mr. DeMattia has 10 years of aquaculture experience ranging from aquacultural engineering and system design to fish, invertebrate and aquatic plant husbandry, including micro/macro algae culture. He received a grant to develop culture techniques for endangered seahorse species from the Resource Conservation District of Greater San Diego. Mr. DeMattia holds a B.S. in Aquatic Biology from UC Santa Barbara.

Martin Gordon, Process Development
Mr. Gordon has 20 years of algae farming experience in Southern California, including laboratory work and process development for algae growth parameters and harvesting. His background also includes mechanical systems design and inter-acing biological systems work, as well as OSHA and EPA compliance. Mr. Gordon is founder and CEO of Valley Spreader Co. and holds a B.S. in Biology from San Diego State University.

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Carbon Capture Corporation